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MAGNETIC RECORDING MEDIUM WITH PATTERNED SUBSTRATE

Abstract

Magnetic recording media exhibiting improved  $H_r$ , SNR and  $S^*$ , suitable for high areal recording density, are obtained by forming a substantially uniform patterned Al or Al alloy layer on a non-magnetic substrate which is substantially replicated in subsequently applied layers to form a data zone. Embodiments include sputtering depositing an Al or Al alloy layer on the substrate and anodizing the sputtered layer to form a plurality of substantially uniform hexagonal cells comprising aluminum oxide. The hexagonal pattern is replicated in a subsequently deposited and epitaxially grown magnetic layer such that the magnetic grains are separated, thereby reducing magnetostatic interactions therebetween.